

Consumer Product Safety Commission

National Electronic Injury Surveillance System

CPSC Document #3002

What is NEISS?

For nearly 30 years the U.S. Consumer Product Safety Commission (CPSC) has operated a statistically valid injury surveillance and follow-back system known as the National Electronic Injury Surveillance System (NEISS). The primary purpose of NEISS has been to provide timely data on consumer product-related injuries occurring in the U.S. In the year 2000, CPSC initiated an expansion of the system to collect data on all injuries. With the expansion, NEISS becomes an important public health research tool, not just for CPSC, but for users throughout the U.S. and around the world.

What is the Source of the Data?

NEISS injury data are gathered from the emergency departments of 100 hospitals selected as a probability sample of all 5,300+ U.S. hospitals with emergency departments. The system's foundation rests on emergency department surveillance data, but the system also has the flexibility to gather additional data at either the surveillance or the investigation level.

Surveillance data enable CPSC analysts to make timely national estimates of the number of injuries associated with (not necessarily caused by) specific consumer products. These data also provide evidence of the need for further study of particular products. Subsequent follow-back studies yield important clues to the cause and likely prevention of injuries.

Information gathered from NEISS, together with data from other CPSC sources, not only guides the Commission in setting priorities for further study, but also may provide the Commission with evidence of the need for:

- a product recall,
- a public awareness campaign,
- a product safety standard.

How Does NEISS Work?

The data collection process begins when a patient is admitted to the emergency department (ED) of a NEISS hospital. An ED staff member elicits critical information as to how the injury occurred and enters that information in the patient's medical record.

At the end of each day, a NEISS hospital coordinator reviews all ED records for the day, selecting those that meet the (current) criteria for inclusion in NEISS. The NEISS coordinator abstracts pertinent data from the selected ED record and transcribes it in coded form to a NEISS coding sheet using rules described in a NEISS Coding Manual.

Identifying the consumer product(s) related to the injury is crucial for CPSC. The NEISS coordinator assigns a product code from an alphabetical listing of hundreds of products and recreational activities, being as specific as the data allow. For example, if a lawn mower were involved in an injury, the coordinator would use a different product code for a walk-behind mower than for a riding mower. If the ED record contains additional product detail, the coordinator includes that in a line or two of narrative text (e.g., gasoline-powered rotary mower made by XYZ Company).

The victim's age, gender, injury diagnosis, body parts affected and incident locale are among other data variables coded. A brief narrative description of the incident is also included.

Once the abstracting and coding are completed, the NEISS coordinator enters the data for the day's NEISS injury cases into a personal computer provided by CPSC. As the coordinator keys in data, CPSC-designed software interactively edits the data, requiring that all fields be filled and allowing only acceptable entries.

Following completion of data entry at the hospital, the PC modem is set to receive a telephone call. During the early morning hours, a PC in the CPSC Washington office polls each NEISS hospital, and collects the newly entered data over telephone lines. After undergoing a second computer editing process, acceptable cases are automatically incorporated into the Commission's permanent NEISS database. The data are available immediately for further review.

The CPSC analytical process begins on the same morning the data are collected. Analysts in the Directorate for Epidemiology read each case, not only checking items for quality control, but also screening each case for a potential emerging hazard.

Follow-back Investigations

For some incidents identified at the NEISS surveillance level, follow-back investigations are conducted through telephone and on-site interviews with the patient or the patient's relative. Investigation reports provide important information about the likely causes of the incident, including the interaction among person, product and environment. Commission staff uses this information-

- to classify incidents by hazard pattern,
- to provide insight into the type of actions needed to reduce or eliminate the hazards,
- to identify defective products and
- to evaluate the effectiveness of safety standards.

Sample Updates

The NEISS is periodically redesigned to update and improve the sample and thereby maintain the validity of injury estimates. This is necessary because, over time, new hospital emergency departments open, others close, while still others change significantly in size (as measured by the number of ED visits).

NEISS sampling statisticians have provided a systematic means for updating the sample of hospitals while retaining the basic sampling plan. In order to minimize the statistical variance while ensuring an adequate geographic distribution, the sampling frame (a list of hospitals meeting the necessary criteria) has been stratified by hospital size and ordered by geographic location.

At each redesign to date, operational improvements in procedures have helped NEISS managers to improve and upgrade the system. Over time this has led to decreases in coding errors and in the amount of underreporting.

The first major redesign occurred in 1978. Several updates have occurred since then:

In 1990, CPSC again updated the NEISS sample to accommodate changes in the universe of U.S. hospitals with emergency departments.

In 1991, CPSC increased the size of the NEISS sample of hospitals from 65 to 91 while retaining the sample design. The increase in hospitals provided approximately 40 percent more injury cases per year. This increase in cases not only allowed for the faster completion of special studies, but also provided for modest improvement in measures of statistical confidence.

In 1997, CPSC again updated the NEISS sample to reflect the current distribution of U.S. hospitals with emergency departments. The current NEISS sample includes 100 hospitals grouped into five strata, four representing hospital emergency departments of differing sizes and a fifth representing emergency departments from children's hospitals.

Other System Milestones

In addition to updating the sample, over time CPSC managers have altered NEISS operational collection and coding rules to accommodate the needs of other agencies and the differing interpretations of which products fall under the Commission's jurisdiction.

Over time, CPSC managers also have modified the definitions of the NEISS variables collected. For example, product codes have been added, deleted, combined or split into two or more codes.

The year 2000 initiative to expand NEISS to collect all injuries necessitated several important operational revisions. The expanded system includes:

- injuries where no product is mentioned (e.g. fell on ground),
- injuries related to products not currently collected (e.g. motor vehicles), and
- intentional injuries such as assaults or suicide attempts.

Data users should carefully consider the likely impact of system updates and modifications, especially when comparing estimated injuries over time.

NEISS Serves Others, Too!

Since 1978, CPSC has assisted other Federal agencies by collecting data of special interest through NEISS. This has allowed other organizations to quickly and easily gather critically needed, statistically-valid national data without the investment in personnel, time and dollars that designing, implementing and executing an independent special survey would require.

In serving the needs of other agencies the scope of NEISS has been broadened to include incidents outside the jurisdiction of CPSC, such as occupational or intentional injuries. The usefulness of these data has been enhanced by adding to the NEISS record a limited number of additional variables, such as the injured worker's occupation. To date other agencies have used NEISS to study injuries associated with motor vehicles, firearms, medical devices, mobile homes, pesticides, acts of violence, and occupation.

With the advent of the expanded all injury NEISS initiated in the year 2000, more Federal agencies may find NEISS a powerful and useful tool to identify and track the public health problems associated with injuries.

For further information on how your organization can benefit by sharing the NEISS, contact:

Thomas Schroeder, Director
Division of Hazard and Injury Data Systems
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814
(301) 504-7431

Availability of NEISS Data

The Consumer Product Safety Act requires the maintenance of a National Injury Information Clearinghouse "to collect, investigate, analyze and disseminate injury data and information relating to the causes and prevention of death, injury and illness associated with consumer products..." (CPSA, Section 5(a) (1)).

NEISS surveillance data are available to the public in various computer formats. Certain standard reports may be requested from the National Injury Information Clearinghouse. Custom reports are also available at rates specified in the Freedom of Information Act.

Follow-back investigation data are available as computer printouts, special reports, and hazard analyses.

Each year the Clearinghouse responds to about 6,000 requests for information. Most requests are answered without charge within 10 working days.

To request injury information, write or call:

National Injury Information Clearinghouse
U.S. Consumer Product Safety Commission
4330 East West Highway, Room 504
Bethesda, MD 20814
Telephone: (301) 504-7921

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The U.S. Consumer Product Safety Commission is charged with protecting the public from unreasonable risks of serious injury or death from more than 15,000 types of consumer products under the agency's jurisdiction. Deaths, injuries and property damage from consumer product incidents cost the nation more than \$700 billion annually. The CPSC is committed to protecting consumers and families from products that pose a fire, electrical, chemical, or mechanical hazard or can injure children. The CPSC's work to ensure the safety of consumer products - such as toys, cribs, power tools, cigarette lighters, and household chemicals - contributed significantly to the 30 percent decline in the rate of deaths and injuries associated with consumer products over the past 30 years.

To report a dangerous product or a product-related injury, call CPSC's hotline at (800) 638-2772 or CPSC's teletypewriter at (800) 638-8270, or visit CPSC's web site at www.cpsc.gov/talk.html. To join a CPSC email subscription list, please go to www.cpsc.gov/cpsclist.asp. Consumers can obtain this release and recall information at CPSC's Web site at www.cpsc.gov.

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